white cloud, without any variation, except a slight change near the head, just sufficient to distinguish the nucleus from the tail at that point. The denseness of the nucleus was so great that Mr. Clarke has no doubt that it might have been visible upon the sun's disc, if it had passed between it and the observer. This apparent density he attributes to the foreshortening of the tail, and its being so directed to the earth that the nucleus must have been seen through a considerable mass of the matter of the tail. The following distances were measured with a reflecting instrument :—

	d	h	m	s				°	′	″
Feb. 28		3	2	15 P.M.	Distance of	Sun's farthest Limb from nearest Limb of Nucleus		4	6	15
,,		3	6	20 P.M.	,,	Sun's farthest Limb from farthest Limb of Nucleus		4	7	30
,,		3	9	40 P.M.	,,	Sun's farthest Limb from Extremity of Tail........		5	6	30

Mr. Clarke supposes the first of these measures to be correct within $15''$; the other two are given as near approximations. Allowance must, of course, be made for the motion of the two bodies during the time of observation. When the sun was on the meridian, the angle made by the line joining the centres of the sun and the nucleus with the lower vertical, on the eastern side, was about seventy-three degrees.

X. On the Deducing of the Parallax of *Mars*, and hence that of the Sun from the Geocentric Motion of the former when in opposition, and especially when near the Node of his Orbit. By S. M. Drach, Esq.

The author, after alluding to the method of determining the solar parallax from observations of the transits of the inferior planets over the sun's disk, states his method as follows :—

"The counterpart of the above is the simultaneous observation at different points of the earth's surface, of the time occupied by a superior planet, when near opposition and near the node, in passing through a certain interval of space, say about half a degree (the sun's diameter); but as this happens at night, comparison stars are to be used, and the interval assumed to be nearly equivalent to their distance. Thus, *e. g.*, if *Mars* be the object observed, and at Greenwich x minutes are occupied by it in describing an arc which it requires only y minutes to describe at the Cape of Good Hope, then will the difference $x - y$, properly applied, give the parallax of *Mars*, and hence that of the sun."

XI. A Letter from Sir J. F. W. Herschel, Bart., to Mr. Baily, dated 6th Sept., 1842, on the Increase in Magnitude of the Star η *Cygni*.

"I beg to call your attention to the star η *Cygni* (21 *Cygni*, Fl.; Piaz. xix. 344), which appears to have increased in magnitude very considerably since the date of Piazzi's observations. It is

now the principal star in the neck of the *Swan*, and of nearly the fourth magnitude,—very conspicuous to the naked eye, and marking, in fact, the only *very* distinctly seizable point between *Albireo* in the beak, and the bright star γ in the body. Now, Piazzi, from nineteen observations in right ascension, and eleven in declination, sets it down as of the 5·6 mag. It does not occur in the Astronomical Society's Catalogue. The star b^2 *Cygni*, which does occur in that Catalogue, is there set down as of the 5th mag. which is also what I make it, or, rather above than under; but η is now a much more distinguished star.

" I may also take this opportunity to mention that the star 34 *Cygni*, the celebrated variable star discovered by Janson in 1600, whose period is 18 years, is now at or near its maximum; at least, it is a star of full the 5th mag. and very nearly equal to b^2 and b^3.

" Bode, on the authority of Lalande, has placed in his maps a star of the 4th mag., with the letter i attached, near η *Lyræ*. I can find no star in the place laid down visible in an opera-glass. It is the star 153 *Lyræ*, of Bode's Catalogue.

" I cannot but suspect several other stars in this constellation of variation; at least, I find the greatest discordance between the actual aspect of many regions within its extent and the magnitudes as laid down by Bode. Harding's maps, however, agree better. In Harding's, however, η is marked of the same magnitude with b^2."